Circular No. 8.

1895

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EDUCATION DEPARTMENT
ONTARIO

DEPARTMENTAL REGULATIONS.

EQUIPMENT RECOMMENDED FOR A GYMNASIUM.

The apparatus marked † is indispensable. Except where the number required is specially mentioned, enough of each kind of machines should be supplied to provide for the largest class under instruction. For the use and a description of the machines see Maclaren's Physical Education : MacMillan & Co.

FOR BOYS.

- † Wooden Dumb Bells.
- † Indian Clubs.
- † Vertical ropes of manilla, three pairs—1 inch, $1\frac{1}{4}$-inch, $1\frac{1}{2}$-inch—the ropes to hang about 20 inches apart.
- † Two horizontal Bars—one at least to be adjustable to different heights.
- † Two pairs Parallel Bars—one pair to be at least 6 feet long ; height from ground, 4 feet 8 inches ; diameter of bars, 2 inches ; distance apart 17 inches. One pair to be at least 7 feet long, height from ground, 4 feet 5 inches ; diameter of bars, $1\frac{3}{4}$ inches ; distance apart, 15 inches.
- † Flying Rings—two pairs.
- † Two Single Trapezes.
- † Rifles or Wooden Rifles.
- † Horizontal Ladder.
- † Travelling Rings—at least six.
- Chest-weight Machines.
- Rowing machines.
- Vertical and Slanting Poles.
- A Rosary.
- A Mast.
- Leaping Poles.
- A Horizontal Beam.
- A Wooden Vaulting Horse.
- Two Planks—plain and bridged.
- The Prepared Wall.

FOR GIRLS.

- † Wooden Dumb Bells.
- † Wands.
- † Indian Clubs.
- Chest-weight Machines.

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LIST OF APPARATUS

Required to Perform the Experiments in High School Physical Science, Part 1.

The pieces marked with an asterisk should form part of individual sets for students' use.

		Probable Cost.
*1	Metric Scale, one foot long, Fig. 5. The ordinary School Rules graduated in inches and centimetres will answer	$0 02
1	Metric Stick	0 50
*2	Rectangular Blocks, Figs. 12 and 13	0 10
1	Dissected Litre Block	2 00
*1	Test Tube on Foot, Figs. 21, 25, 59, 88	0 10
*1	Pinch-Cock, Figs. 21, 22, 106	0 15
1	Burette, Mohr's, 50 C. C. graduated in tenths	2 00
1	Measuring Cylinder, 100 C. C. graduated, Figs. 23, 97, 99	0 80
*3	Beakers, different sizes, Figs. 25, 26, 36, 56, 69, 89, 93, 106, 121, 124, 127, 136	0 55
1	Glass Basin, Figs. 26, 31, 55, 57, 68, 76, 90, 124	0 60
1	Fire Syringe, Figs. 27 and 107	2 00
1	Air Pump and Receiver	24 00
1	Elastic Rubber Balloon. A toy balloon answers well	0 10
1	Pendulum Bob, Figs. 29 and 66	0 10
1	Track for Balls, Fig. 30	0 75
4	Well turned Metal Balls to use with above	2 00
*1	Tuning Fork, Simple Form, Fig. 31	0 20
1	Radiometer, Fig. 32	3 00
*3	Supports, Figs. 33 and 35. May be made of bent wire inserted into block of wood	0 10
*¼	Doz. Pith Balls, Fig. 33	0 15
*1	Rod of Vulcanite	0 25
*1	Bar Magnet, Fig. 34	0 25
*1	Magnetic Needle on Stand, Fig. 36. Cheap form of compass will answer	0 25
1	Track, Car, Pulley and Scale-pan, Fig. 37. Should be carefully constructed as described in Text Book	8 00
	Removable support to be screwed into Laboratory Table. One face of support should be supplied with Scale and Mirror, Figs. 38 and 50, one at each table	1 50
	Steel wire of different sizes for making elastic Spiral Springs	0 15
1	Physical balance, with set of Metric Weights	8 50
*1	Adjustable Spring Balance	0 65
*3	Test Tubes, Figs. 45, 96, 130, 135	0 10
*1	Spirit Lamp or Bunsen Burner	0 50

		Probable Cost.
*1	Pair Forceps, Fig. 46	$0 20
*1	Mortar and Pestle	0 30
1	Small Vise, Fig. 51	0 40
*1	Set of Heavy Weights, Figs. 37, 38, 48, 50, 52 and 53	0 65
*1	Glass Disc with hook at centre, Figs. 55 and 65	0 20
½	Pound Capillary Tubing, assorted sizes	0 50
2	Tubes, Fig. 58 Each 25.	0 50
1	Tube, Fig. 62	0 90
*3	Thistle Tubes, Figs. 60, 63, 72, 88, 89, 92, 94, 95 Each 15	0 45
1	Transmission of Pressure Apparatus, Fig. 61	1 00
*1	Pipette, Figs. 59 and 102	0 15
*1	Tall Glass Jar, Figs. 64, 65, 92, 118	0 60
*1	Large Glass Tube with edges ground, Figs. 65, 67 and 127	0 85
1	Archimedes Principle, Fig. 69	2 00
1	Globe for weighing air, Figs. 70 and 77	2 50
2	Small Bottles. Two four-ounce medicine vials will answer	0 10
*2	Small Perforated Rubber Corks, Figs. 73, 85, 86, 87, 112, 125, 127. The corks should fit the bottles above and the Test Tubes and Florence Flasks used in other experiments	0 15
1	Pair Madgeburg Hemispheres, Fig. 74	5 00
1	Guinea and Feather Tube, 76	5 00
1	Barascope, Fig. 77	2 00
*1	Barometer Tube, heavy glass, Figs. 78 and 79	0 50
1	Mariotte's Law Apparatus, with extra Bulb Tube for Charles Law, Figs. 80, 119	8 00
*1	Retort Stand	0 50
*2	Small Florence Flasks, Figs. 85, 86, 87, 112, 125, 127	0 20
*1	Florence Flask with wide mouth, Figs. 92, 118, 122, 123, 124, 130, 137	0 25
*1	Glass Tube with Stop-Cock, Figs. 86 and 87. A piece of rubber tubing with Pinch-Cock will answer	0 85
*1	Hydrometer Jar, Figs. 88, 104, 105	0 45
1	Universal Support, Figs. 89, 92, 93	2 00
2	Rubber Corks, each with two holes, Figs. 92, 112, 118, 122, 123, 130, 137. They should fit Florence Flask with large mouth	0 15
*1	Porous Battery-cell, small size	0 20
*1	Perforated Rubber Cork to fit Battery-cell, Fig. 92	0 25
1	Specific Gravity Bottle, Fig. 100 or 101	1 25
*1	Weighted Wooden Prism, 1 square Centiometer in sections, Figs. 20 and 103	0 25
1	Hydrometer for light and heavy liquids	0 75
1	Tube for Fig. 106	0 60
4	Bunsen or Grenet Cells, Fig. 108 Each $1.50	6 00
1	Ball and Ring, Fig. 109	1 25
1	Pyrometer, Fig. 110	3 00
1	Compound Bar, Fig. 111	1 00
1	Chemical Thermometer, graduated in both Centigrade and Fahrenheit Degrees, Figs. 116, 118, 121, 122, 123	2 25
1	Differential Thermometer, Figs. 117, 144, 145	2 50
1	Liebig Condenser, Fig. 125	1 00
1	Cryophorous, Fig. 126	1 75
1	Calorimeter, Fig. 129	2 75

		Probable Cost.
1	Ingenhous Apparatus, Fig. 132	$1 50
1	Apparatus to show convection in Gases, Fig. 139	1 00
1	Glass Candy Jar for Fig. 140	0 60
1	Large Iron Ball, Figs. 141, 145	0 75
1	Leslie Cube, Fig. 144	1 40

SUNDRIES.

Rubber Tubing, heavy		0 50
Sheet Rubber	Per sq. foot	0 25
Parchment Paper	" sheet 20x30	0 05
Wire Gauze	" sq. foot	0 15
Insulated Copper Wire		0 10
Glass Tubing, heavy, for cutting and bending into the various forms used in the different pieces of apparatus	(½ lb.)	0 30
Sealing Wax	Large stick	0 25
Iceland Spar		0 65
Mica		0 10
Sheet Zinc and Sheet Copper		0 15

250—February, 1898.

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